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ABSTRACT

Four student and two faculty focus groups met to discuss interdisciplinary education at the Minnesota Center for Arts Education. The focus groups perceptions about interdisciplinary education resulted in several primary conclusions: (1) interdisciplinary education is not extensive in public education systems; (2) most students feel a primary attraction to the Arts High School because of the arts' emphasis but feel interdisciplinary study is essential; (3) most students like the delivery of interdisciplinary education through a separate course; (4) faculty see the need for a separate course for interdisciplinary education and for opportunities for integrating interdisciplinary learning in other settings; (5) for some students, integrating more interdisciplinary education into general studies and the arts is problematical; (6) students and some faculty express an interest in more inter-arts education; (7) teachers and students express significant concerns about assessment of interdisciplinary education; (8) team teaching is an integral part of the separate interdisciplinary studies classes; and (9) students and teachers have similar opinions about interdisciplinary education and studies at the Arts High School. A description of the school learning environment is provided. Five appendices present the mission of the Minnesota Center for Arts Education, a list of focus group participants, a list of the primary questions asked of students and teachers, a questionnaire of interdisciplinary team teaching, and a summary of the conclusions. (CK)

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FOREWORD
Interdisciplinary Focus Group Report

Changes, choices, challenges! These are words which describe the future. Life will be even more complex and swiftly changing. In fact, others have said the only constant is and will be "change." There will be greater proliferation of choice as products fill the shelves of stores, jobs are created and changed and technology provides more information for consideration in making choices. Life will require us to make an increasing number of decisions, be good problem solvers and take responsibility for adjusting to the accelerated pace of change.

How can we prepare ourselves and our children for this high-paced, complex society? Education, of course, is one of the key elements in this process. Students need "real life" experiences to be ready for real life. They will need to know how to gather and process information, using the latest forms of technology. They will need to determine connections and relationships between information and ideas. Patterns will need to be sorted out and created to make sense of all the input. Alternatives must be considered, decisions made and problems solved. This kind of active learning increases energy and motivation to learn. Learning which involves multiple forms of input and high stimulation is what human brains are made for. Most of us learn best when we are highly stimulated and engaged actively in assimilating information. When this kind of learning goes on in schools, it is hopeful we will have students eager to learn, eager to identify and solve problems and inspired to create new ideas, products and paradigms.

"Real learning" involves stimulation of thought from multiple sources, active involvement in assimilating knowledge, discovering relationships, and interdisciplinary learning opportunities are essential. This focus group report is a look at the processes designed, implemented and, of course, adapted, to provide interdisciplinary learning opportunities at the Minnesota Center for Arts Education during the first two years of programming. We hope that the content of the report is revealing and will be useful to others implementing interdisciplinary programs. Additional reports highlighting other processes and programs may be prepared in the future. We welcome your comments, ideas and experiences.

Interdisciplinary learning opportunities resemble situations students encounter outside of school. They give relevance to students and prepare them for learning and solving future problems. Having opportunities to connect knowledge and input from many sources, along with finding alternatives and solutions to complicated problems, prepares students to make decisions in our complex society. In the long-run students need to take the responsibility for their own decisions. Let's help them build the skills they will need to prepare for a world filled with changes, choices, and challenges!

Pamela N. Paulson, Ph.D.
Resource Programs Director

INTRODUCTION
Interdisciplinary Education at the Minnesota Center for Arts Education Arts High School April, 1992

From the very beginning of planning for the Arts High School, we discussed the need to create a holistic program, one in which relationships and connections were emphasized. One of our early inspirations was an article by Ernest Boyer called, "Seeing the Connectedness of Things." In this May, 1982 article which appeared in Educational Leadership, Boyer argues that current society emphasizes individual gratification, rather than group or societal goals. He goes on to state that "the mission of general education is to help students understand that they are not only autonomous individuals, but also members of a human community to which they are accountable." He saw, as we did, that schools tend to exacerbate isolation by separating knowledge into individual disciplines and ignoring the natural relationships that should be a part of learning.

In order to foster "connectedness," we looked for ways to unify our program in our planning stages. We started by identifying goals for each program area. We then studied the program goals for unifying ideas, and we came up with a set of 10 interdisciplinary goals which we used as the foundation for our interdisciplinary program. In abbreviated language, those ten goals featured the study of:

1. a current social issue;
2. historical, cultural, and social relationships between the arts and general studies;
3. elements of communications common to the arts and general studies;
4. structural principles common to arts and general studies (e.g. cause-effect, models, cycles);
5. influences and connections between people in our pluralistic world;
6. careers relating to arts and general studies;
7. the ethical basis for decision-making;
8. ways of knowing;
9. each person's total personal development;
10. processes for judging information and experience.

Then we examined ways in which we could deliver these interdisciplinary goals to our students. It seemed important that we dedicate instructional time to interdisciplinary teaching and learning, so we identified two hours per day as the interdisciplinary program. We also divided our teachers into two teams of five and assigned five of the interdisciplinary goals to each team. Teams were to plan instructional programs around the goals, while alternating weekly planning responsibilities.

After just a week into the school year, it became apparent that the delivery plan was too complex to be practical. It required more planning time than we could give. We also found that two hours per day dedicated to interdisciplinary programming left us with too little time to deliver individual arts and general studies programs. We made some changes, and these changes were the first of several that we would make over the first two years in our effort to find the right blend for interdisciplinary teaching and learning.

The first delivery changes we made were to reduce the size of the planning teams from five to two and to reduce the amount of instructional time for the interdisciplinary program to two hours on Tuesdays and Thursdays. Each team of two then developed an interdisciplinary offering which it taught five times to groups of students who rotated through five offerings on a weekly basis. As the year progressed, we changed offerings, varied the teams and varied the length of the offerings.

After year one, we again debated the purpose and format of our interdisciplinary program. We worried about the amount of time being devoted to the interdisciplinary program and the relatively small amount of time being given to individual disciplines. We worried about the level of preparation our students would bring to postsecondary schooling and we worried about how postsecondary schools would receive our interdisciplinary program. We also acknowledged the need to continue our efforts to build connections and relationships.

The result of our debates in year two, was to cut back the interdisciplinary program to two hours on Wednesday mornings. We offered eight separate programs, with each program meeting for four Wednesdays. The programs we offered included: Cultural Transformations, Science of Chaos, Her Story: Issues of Conflict and Transformation, Rites of Passage, The Ongoing Transformation of Folktales, It's a Wonderful Life (an examination of random selection in nature), Geometry of Dance, and Spiritual Transformations.

In March of 1991, we conducted a series of focus groups with students and faculty in order to take a studied look at the progress of our interdisciplinary program. The report which follows provides the results of those focus groups.

Without trying to upstage the report, I would just say that we determined from the focus groups and other input that we needed to make another change in our delivery system. The interdisciplinary offerings, while rich and provocative in many ways, frequently came across to our students (and sometimes to school staff) as an extra chore which had little to do with the rest of their school experience. Teaching and administering the interdisciplinary program also consumed a great deal of staff time.

For these and other reasons, we decided that in year three we would abandon the idea of offering interdisciplinary programming as a separate and distinct item in our schedule. Instead, we made the commitment to integrate interdisciplinary teaching and learning within the regular school program. Teachers would again team with other teachers, but the interdisciplinary experiences would be offered within the time allocated in the schedule for individual disciplines, like mathematics or music. Shared outcomes would be identified between programs. In some cases, new interdisciplinary outcomes would be identified as teachers planned their experiences. Our hope is that fresh and authentic connections will be built in a way that makes sense to students and staff.

It was not difficult for us to make a philosophical commitment to interdisciplinary programming; it was difficult for us to find a delivery model that worked for us and also met external expectations. We expect that many of our experiences as summarized in this report will inform other educators (particularly those at the high school level) who are interested in implementing some type of interdisciplinary program.

Mark Youngstrom,
Director, General Studies

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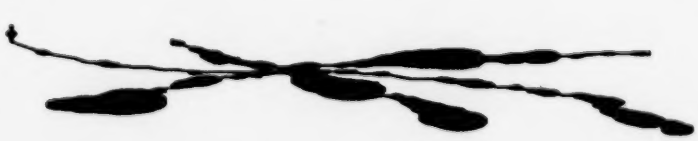

RESEARCH AND REPORTING METHODS

Purpose of Study

The study's purpose is to gather perceptions from faculty and students at the Minnesota Center for Arts Education about the interdisciplinary education program, a facet of the school. The study was commissioned by the Minnesota Center for Arts Education to provide its educational staff with data as part of its on-going evaluation of all programs. Because the Center presents an innovative educational model for the state, the results of the study might be useful to a larger public interested in interdisciplinary education.

Focus Group Research

The focus group meeting process was decided upon as the method of conducting the research. A focus group is a

> carefully planned discussion designed to obtain perceptions about a defined area of interest in a permissive, non-threatening environment. It involves six to ten people with a skilled moderator. The discussion is relaxed, comfortable and often enjoyable for participants as they share ideas and perceptions... If the focus group process is carefully conducted and appropriately analyzed, the user is able to make generalizations to others who possess similar characteristics. [1]

Between March 5 and March 21, 1991, six meetings were held at the Center to garner information from the faculty and students related to the interdisciplinary program. Overall, forty people participated in the discussions, twenty-six of whom were students, and fourteen, teachers.

Of the six focus groups, four were comprised of students, and two were faculty. A series of questions formulated in advance and a beginning definition of interdisciplinary education provided the basis for each discussion.

All the meetings were documented via audio tape recordings, over two hundred and fifty pages of transcripts, written responses to a questionnaire, notes of the assistant, and the moderator's own field notes or impressions.

To encourage candid response, participants in all the groups were assured that remarks cited in the report of the meetings would not be attributed to individuals by name. To provide a sense of the orientation of the people whose words are cited, each quotation is followed by a designation of student, arts teacher or general studies teacher and the number of the focus group in which the person participated. Some quotations, so designated, are from anonymous written sources: participants' notes from the focus groups and teacher questionnaires.

The main body of the report spotlights the results of the study related to interdisciplinary education. Other important perceptions derived from the discussions, such as the qualities that characterize student-staff relationships at the Center, is provided in the section called School Learning Environment, page 32-33.

Research of this kind reveals information in terms of perceived truth, not in terms of factual truth. For instance, this study finds that some students have an expectation that they spend twenty percent of their time in an arts area other than their main one. The Arts High School originally had a "twenty percent" plan. The fact is that the plan has changed, but some expectations linger.

Refer to the appendices for additional background on the research, including the Mission of the Minnesota Center for Arts Education (Appendix 1); a listing of participants in the focus groups (Appendix 2); the discussion questions asked during the meetings (Appendix 3); and a questionnaire on team teaching (Appendix 4).

Project Team

The project director of the study was Mark Youngstrom, Director of General Studies. Karon Sherarts, former Director of Resource Programs, and two faculty members, Karen Monson, Visual Arts Instructor, and Barbara Morin, Theater Instructor, acted as advisers to the project. Pat Roles, Program Assistant, recorded all meetings and provided minutes. Margaret Hasse, Independent Consultant, moderated the meetings, analyzed the data and wrote the report. Pamela Paulson, Director of Resource Programs, completed final editing of the report.

[1] Assessing Training Needs: The Use of Focus Group Interviewing (Richard A. Krueger, Minnesota Extension Service, University of Minnesota, St. Paul, 1989, page 2)

EXECUTIVE SUMMARY

As part of on-going assessment of its programs, the Minnesota Center for Arts Education examined its interdisciplinary education efforts through a focus group research project in the spring of 1991. Focus group research uses organized, documented discussions to discover perceptions related to an issue. Twenty-six Arts High School students and fourteen teachers took part in six meetings. Analysis of the discussions yielded general information about the school climate and specific information about the interdisciplinary program, reported in the form of twelve conclusions.

Because the Center presents an innovative educational model for the state, the results of the study might be useful to a larger public interested in interdisciplinary education.

School Climate

The interdisciplinary education program exists within a school climate at the Minnesota Center for Arts Education where students and faculty appear excited to be pioneering an educational venture with the freedom to experiment. The atmosphere of the school is portrayed as flexible and vital.

Faculty and students enjoy positive relationships. Students feel accepted and encouraged in their arts interests, and are *"growing personally."* (student, group 2) Students say that the school *"is closer to the real world"* and is more informal than other schools they've attended. (student, group 2) Most of the students and teachers thrive in this informal or flexible environment.

Teachers see high motivation among the students, especially in terms of their arts areas. Teachers value the collegial relationships with one another and report that they have unusual freedom of choice in the content of the curriculum at the Center and that they are encouraged to try new approaches to teaching.

Conclusions

The study of Arts High School faculty and student perceptions about interdisciplinary education resulted in twelve primary conclusions, as follows:

1. Interdisciplinary education is not extensive in public education systems.

Some of the students and most of the faculty describe previous involvement with a facet of interdisciplinary education, but both groups consider interdisciplinary education very limited in the public school system. *"It was all real minor,"* asserts one student in reference to previous experiences (student, group 1). *"It wasn't an intentional, planned curriculum,"* says another. (student, group 1)

In the perception of faculty at the Arts High School, interdisciplinary education isn't fostered by college teacher preparation programs. After college, opportunities to learn more about interdisciplinary teaching and learning appear to be few.

2. Students and faculty share a definition of interdisciplinary education.

Interdisciplinary education at the school is characterized by an educational view valuing the inherent interconnected quality of knowledge. Subject area distinctions are seen as necessary but artificial classifications of knowledge. In interdisciplinary pursuits, teachers and students recognize and explore fundamental relationships that exist not only between and among subject areas, but also between and among factual information, skills, students' personal interests, and practical applications of learning.

Arts High School teachers tend to discuss interdisciplinary education philosophy in general, rather than in specific terms related to teaching techniques or organizing principles. This may be due to the fact that the school is new and not at the stage of codifying its practices. According to one teacher: *"I think it's going to take a couple of years of doing interdisciplinary before these programs and these ways of presenting are clear for me because I learn by doing."* (general studies teacher, group 5)

3. The mission for interdisciplinary education is compelling.

According to teachers, the mission of interdisciplinary education is to awaken in students, personal connections with information so that they become more motivated and committed to learning about and celebrating existence.

4. Most students feel a primary attraction to the Arts High School because of the arts emphasis; however, some feel interdisciplinary study is also essential.

Most students consider the interdisciplinary aspect of the school to be very important and some consider it absolutely essential. Others feel that the school's uniqueness is its arts focus and were the interdisciplinary aspect to be diminished, the school's essential nature or purpose would not change.

The range of opinion on this issue is expressed through these two comments: *"Interdisciplinary is vital to get the most out of life. I think that interdisciplinary helps me become a more well-rounded person and a more knowledgeable person. It helps me decide what to do with my life and how I want to do it."* (student, group 4); and *"It's not needed as an integral part of this school. The reason this school exists is because of the arts, not interdisciplinary."* (student, group 4)

5. Most students like the delivery of interdisciplinary education through a separate course, but they debate the successfulness of the current classes.

Many students describe positive experiences in interdisciplinary classes. *"We had an interdisciplinary class in which we had to depict a period of time in history using the music of that time period. We collaborated with five students in a group and made a film. I was impressed with how well everything clicked. The end product was pretty good."* (student, group 1) Satisfaction is generally linked to a final product, the inherent interest of a topic, or an approach which was *"less academic, more physical."* (student, group 1)

Students report problems with the 1990-91 schedule. During the year, the students experience eight classes, each meeting once a week for four sessions. The majority of the students scramble to meet the once-a-week deadlines. They wish for adequate time to explore the topic and go into depth. Some students prefer to change groups during the year, instead of remaining with the same students.

While students like the element of surprise and risk in the classes, they also express a desire for greater clarity in the intentions for the interdisciplinary classes. *"The connections are very vague. I think the connection is more important than learning about the subject."* (student, group 4)

Even with concerns, the majority of students register their desire to preserve a special time in the schedule for interdisciplinary studies. Students feel it provides a sure opportunity to learn about provocative issues. *"The special interdisciplinary is a place to fit miscellaneous topics that may not evolve elsewhere, like spiritual transformations, women's rights, rights of passage and culture as a whole."* (student, group 1)

6. Faculty see both sides of the need for a separate course to assure a place for interdisciplinary in the curriculum. Regardless of whether such a course exists, they are unified in sensing greater opportunities for integrating interdisciplinary in other settings.

Some teachers feel that a separate course plays a role in underscoring the importance of interdisciplinary education, of making sure that it occurs in a significant way. Others feel that delivering interdisciplinary through a separate course goes against the concept of interdisciplinary. Ambivalence about a need for a separate class is expressed in this way: "Part *of me says that we need a separate place to make interdisciplinary happen, a chunk of time with some people working together. It's good and practical. But part of me is uncomfortable with a separate class, using the old familiar framework."* (general studies teacher, group 6)

When teachers describe memorable experiences in the interdisciplinary course, they most often relate how students demonstrated their assimilation of class material through final presentations. *"Kids put together a presentation that had an emotional and political statement. It was just incredible. They used the material we had given them, and they took it further. It was really moving."* (arts teacher, group 5)

Teachers acknowledge some problems in the format of the separate studies classes. The classes can tend to be shallow if students don't have core information, skills or background. Teachers allude to the formation of *"group personalities,"* some with *"negative, anti-risk-tasking leadership."* (general studies teacher, group 5)

If greater integration into general studies and arts classes is to occur, teachers refer to the need for coordination and preplanning of such an effort.

7. Interdisciplinary teaching and learning occurs at the Arts High School not only in the separate class, but also during general studies and arts classes. To some students, integrating more interdisciplinary education into general studies and the arts is problematical.

Teachers and especially students offer a significant number of examples of interdisciplinary teaching and learning in the school's arts and general studies classes. Generally, the examples describe individual lessons or experiences that connect general studies and a facet of the arts. For example, a concept in math, science or social studies is taught to students and they are asked to give presentations using dance, theater or another arts area that demonstrate their grasp of the concept. Some teachers and students also refer to an overall teaching style where frequent and varied connections are made.

People speak of the general studies classes forging linkages between the subject and *"real life,"* (student, group 2) including what is useful. *"We talk about a lot of things that apply to the world and apply to our life. We do current event assignments that keep us up-to-date on things that are going on. It's a conscious effort to apply things."* (student, group 2)

In the arts classes, linkages are made with other arts, with general studies or to the community. *"We have dance-related time in our dance area where we study things like anatomy, dance careers, community dance groups. It's related to other things; it's very interdisciplinary."* (student, group 2)

Students' main reservation regarding interdisciplinary in their general studies courses is concern that they may not be gaining basic knowledge of the subjects. *"For me, this general studies class didn't stay on track enough of the time; it's too related. I can't keep my foundation underneath it to really apply the rest. I don't think enough is being taught on the basic level."* (student, group 2) Students also express concern about greater incorporation of other areas into their arts classes: *"If interdisciplinary is integrated into our arts areas, don't take away from the focus on people's art. Students need a lot of time in their arts areas."* (student, group 1)

8. **The majority of interdisciplinary education at the school related the arts and non-arts areas. Students and some faculty express an interest in more interarts education.**

Students at the school specialize in one of six arts areas. Many students speak of wanting more interaction between and among their specialty and others: *"I want more contact between the arts areas."* (student, group 4)

Arts teachers, too, want association with other arts areas. A teacher points out that the separate series of classes in interdisciplinary is currently *"the one chance arts instructors have to meet students in other fields."* (arts teacher, group 5) Another arts teachers concurs that, without planned contact with the other arts, *"I get stuck in my studio, my niche."* (arts teacher, group 5)

9. **Teachers and students express significant concerns about assessment of interdisciplinary education.**

In many teachers' perceptions, a new type of assessment must be developed to be specific to individual students' growth and application of knowledge. *"The expectations have to be for what the students themselves get out of it. How to handle the evaluation of private vision?"* (arts teacher, group 6)

The assessment must be flexible so that teachers can alter the stated outcomes as the teaching and learning progresses, including incorporation of unanticipated results. *"You can plan activities, but you can't plan results."* (general studies teacher, group 5) *"With interdisciplinary, you can't always predetermine what will happen when you put the subjects together."* (arts teacher, group 6)

The assessment must not rely upon productions or assignments: *"In interdisciplinary, do you really need a finished product to assess? I think the process is more important."* (general studies teacher, group 6)

Some teachers believe that an aspect of interdisciplinary is for students to simply experience new things. *"Assessment can actually get in the way. Sometimes the correct way is to just make sure the students attend the class, just show up, be present."* (general studies teacher, group 6)

10. Team teaching is an integral part of the separate interdisciplinary studies classes, and is frequently essential in other settings as well.

Teachers believe that students benefit from observing adults working side by side with one another, encountering their colleague's fields. *"I think it's especially valuable for students to see their teachers working together productively and respecting and investigating areas outside the realm of their expertise."* (teacher, questionnaire)

Team teaching, especially with a compatible partner, can be tremendously enriching for individual teachers and an entire faculty. Through such close work together, teachers gain feedback on their own teaching, exposure to new ideas and appreciation of their peers. *"As a teacher, I learn from the other teacher. I see new teaching styles."* (teacher, questionnaire)

Compatibility between teachers, noted as the important factor in the teaching relationship, is defined most often in terms of personality, and occasionally in terms of teaching philosophy or style. *"I suppose personality clashes could occur,"* writes one teacher (teacher, questionnaire), and another: *"Difficulties could arise if the philosophies are violently in opposition."* (teacher, questionnaire)

The need for sufficient planning time appears critical when a second teacher is involved in interdisciplinary teaching. Two other problem areas some teachers encounter are the lack of know-how in joining areas and inadequate time to go into depth.

11. Students and teachers express remarkably similar outlooks about interdisciplinary education and the interdisciplinary studies at the Arts High School, with a few notable differences.

There is remarkable congruence in opinion between students and teachers and throughout the six focus group meetings. The similarities are striking in the way both groups define interdisciplinary education, perceive the lack of opportunities in the general education system, consider the applications of interdisciplinary education at the school and name the factors contributing to successful experiences or programs.

The most notable difference in perception and opinion is that students clearly favor a separate interdisciplinary class, even with reservations about the effectiveness of the current year's classes. Teachers are more divided about delivery of interdisciplinary through the vehicle of a separate class, but express more consistent pleasure in the classes. Teachers saw some students create unusual productions that demonstrated internal integration of the material presented in class. Teachers also say how much they enjoy the opportunity to work side by side with another teacher.

Students, much more than teachers, are reluctant to support greater integration of interdisciplinary education into general studies or arts classes. In general studies, they worry that they will not obtain foundation knowledge. In the arts, they are concerned about getting enough time to concentrate on their discipline. Among students, support is found for more inter-arts activity.

12. A number of specific factors influence whether interdisciplinary education flourishes.

Among the factors that may positively affect interdisciplinary education are:

a flexible attitude on the part of the teacher;
adequate preplanning time for the teachers;
preservice and inservice education for teachers;
use of a variety of participatory, hands-on teaching and learning strategies;
willingness to give more than usual control to students for the aim and methods of the learning experience;
permission for students and teachers to be playful and to experience learning together;
discovery of natural linkages between areas;
inclusion of the arts;
a reasonable number of students;
availability and use of various materials in addition to those in print format;
opportunities for team teaching;
and opportunities for student cooperative work as well as individual work.

Most teachers and some students feel that broad, universal themes not only unify various teachers' programs in a school, but also provide a serviceable way to look at issues and ideas from the vantage of various subjects. Teachers refer to creating mental pictures, of helping students understand big concepts: *"It's important to have an evocative, expansive theme that encourages everybody to think freshly and in new ways, to find new applications. It needs to touch on a vital aspect of life."* (general studies teacher, group 5)

CONCLUSIONS IN DETAIL

1. **Some of the students and most of the faculty describe previous involvement with a facet of interdisciplinary education, but both groups consider interdisciplinary education very limited in the public school systems.**

In most public schools, interdisciplinary education appears isolated to particular teachers' interests or outlooks. It does not appear to be systematically supported by schools or teacher preparation programs. Students identify a few teachers who taught in an interdisciplinary manner and describe a few discreet interdisciplinary experiences. *"It was all real minor,"* asserts one student. (student, group 1) *"It wasn't an intentional, planned curriculum"* says another. (student, group 1)

In the perception of faculty at the school, interdisciplinary education is not a concept fostered by college teacher preparation programs. After college, opportunities to learn more about interdisciplinary teaching and learning seem to be few. When a current Minnesota Center for Arts Education staff member speaks of a past experience developing a high school humanities course, he contends that *"he hadn't been prepared to do that."* (arts teacher, group 5)

Formal schedules, large classes and lack of support in many high schools are cited as factors mitigating against interdisciplinary education. According to focus group participants, it may be easier for teachers in smaller schools to develop interdisciplinary approaches since the schools are not as departmentalized and teachers sometimes teach several subjects. In the students' minds, elementary teachers have more opportunities to relate subjects, skills and applications.

Students offer examples of interdisciplinary experiences, and describe omissions in their previous educational backgrounds. The examples and descriptions suggest several conclusions. First, the student anecdotes include examples of several types of interdisciplinary linkages, such as between content areas or between subjects and skills. [2]

A second conclusion derived from the students' examples: that the majority of prior interdisciplinary experiences were discreet, individual activities. There are no indications that the activities were part of a larger interdisciplinary curricular framework.

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[2] Definitions in this section of the report reply upon research by the Minnesota Department of Education for its Curriculum Integration Survey. According to the survey research, interdisciplinary education or curriculum integration can occur between and among these areas: subjects (often defined as school classes such as mathematics, music, history); contents (subdivisions or units of subjects, such as history in art or native American studies in social studies); and skills (often defined as thinking, physical movement, performance or production tools that students can use across the curriculum, such as problem-solving, critical thinking, creativity, writing skills and oral communication). For more information, contact the Minnesota Department of Education, 550 Cedar Street, St. Paul, MN 55101.

Third, in the majority of examples one subject, content or skill area appears dominant in the linkage, and the other subject, content or skill area is used in the service of the first. In an occasional example, subjects, contents or skill areas appear to be of equal importance.

Here are examples showing the range of response:

- *"In fifth grade, we danced in a health class in order to demonstrate the work of the digestive track."* (student, group 1)

- *"We did have some art history in our visual arts class."* (student, group 1) • *"We were studying native American history, and during a fall cookout, we had to look for foods they would have eaten."* (student, group 1)

- *"In my art class, motivated students were allowed to experiment with the computer and a photography lab."* (student, group 2)

- *"Once, in a history class, we saw the movie, "Ghandi," and analyzed it from both a historical and artistic point of view."* (student, group 4)

- *"In ninth grade, someone talked about how all the subjects are related, but they didn't do anything about relating them."* (student, group 1)

- *"I had a Spanish teacher who infused a lot of culture. We did skits and songs and math in Spanish. She brought in art objects and included information on Flamenco dancing."* (student, group 2)

- *"The arts areas were never combined with general studies."* (student, group 1)

- *"All the academics were straight academics and all the little art programs were all art."* (student, group 1)

- *"My music teacher and English teacher worked together and the students wrote music and plays."* (student, group 1)

Few cross-arts interdisciplinary activities are described, with the exception of musicals that included dance, music and theater, and an all-arts festival or fair. *"We had a fine arts festival one weekend."* (student, group 2)

Individual faculty at the Arts High School have been involved in such interdisciplinary ventures as an inter-school team-taught class funded by the Federal government in the 1970's; a summer Minnesota Center for Arts Education, Minnesota Arts eXperience (MAX) workshop[3]; and a new junior high course integrating a number of subjects, among others.

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[3]Each summer, the Minnesota Center for Arts Education's Resource Programs offers an array of summer classes and workshops for students and teachers called the Minnesota Arts eXperience or MAX. For a recent catalog, contact the Center.

2. Overall, faculty and students at the Arts High School share a definition of interdisciplinary education.

Interdisciplinary education at the school is characterized by an educational view valuing the inherent interconnected quality of knowledge. Subject area distinctions are seen as necessary but artificial classifications of knowledge. In interdisciplinary pursuits, teachers help students recognize and explore fundamental relationships that exist not only between and among subject areas, but also between and among factual information, skills, students' personal interests, and practical application of learning.

One student tells how studying the background of a certain drama *"made me relate to my grandmother and realize that a lot of the problems they had in the 1930's are still here."* (student, group 1)

According to people at the Center, interdisciplinary education entails conscious effort and spontaneous revelation. Interdisciplinary teaching allows students a significant amount of freedom and responsibility for the aims and the means to achieve them. *"Interdisciplinary is supposed to present branches that students can find and connect for themselves, personally, with their interests. Students have to make this learning strong for themselves; they have to find the necessary energy to make it work."* (student, group 2)

Interdisciplinary education addresses various learning styles of students, such as visual and kinesthetic. Hands-on, participatory and interactive methods of teaching and learning are favored in this approach to education. Teaching this way can *"find a way to involve all the different types of people in the class."* (general studies teacher, group 6)

At the Arts High School, students' interest in the arts is a key ingredient or motivational force in the interdisciplinary experience. For instance, students are frequently asked to make an artistic presentation incorporating material covered in an interdisciplinary unit. Frequently, general studies teachers use students' interest in the arts to motivate them to seek further information in another subject, such as encouraging a student interested in theatrical set design to learn the necessary trigonometry.

Focus group participants feel that the arts should be an important ingredient for interdisciplinary education in other school settings. They maintain that the arts are ideal vehicles for interdisciplinary education involving, among other qualities, individual commitment and revelation, creativity, possibility for group involvement, and playfulness.

Some combinations of subject areas appear to students to be inherently better than others, although students do not necessarily agree on the best combinations. Combining areas occasionally feels to students and teachers alike as artificial and contrived. *"One thing that bothers me sometimes is that you can tell it's an effort to incorporate the arts areas. There's a box that says creative effort. There's always just one time during each SLP marking*[4] *that we do something like that. It's really obvious sometimes."* (student, group 3)

[4] SLP stands for "Student Learning Plan," a reporting system used at the Arts High School which reports student progress on assigned learner outcomes within each program of the school.

According to results of a teachers' questionnaire filled out at the completion of the focus groups, team teaching is a definite asset to interdisciplinary education, but not a required component.

Some students find aspects of interdisciplinary to be *"disturbing, because you don't know where you are; interdisciplinary can hop from one subject to another."* (student, group 2) Learning new approaches can be problematic for students: *"It's good for me, the experience I gained from experimenting with different approaches to learning. But it's difficult to start doing this now, with ten years of schooling in a different way, rather than starting when I was in elementary school."* (student, group 3)

Arts High School teachers tend to describe interdisciplinary education in general terms related to what students realize through participation in interdisciplinary experiences, rather than in specific terms related to teaching techniques or organizing principles. Among the reasons for this emphasis and ellipsis in the definition may be that the school is new and the Center staff is not at the stage of codifying its practices. *"I like the unstructured nature of this School, that we didn't know exactly what we were doing, that we get to make it up as we go,"* says one teacher. (general studies teacher, group 6) Another person comments: *"I think it's going to take a couple of years of doing interdisciplinary before these programs and these ways of presenting are clear for me because I learn by doing."* (general studies teacher, group 5)

Additionally, some teachers feel that interdisciplinary education can never be satisfactorily codified in either outcomes or practice because the process must remain flexible and changeable. *"How can you put on paper what we do in interdisciplinary? I wouldn't know how to translate the magic."* (general studies teacher, group 6) Another teacher believes that *"a very focused, prescribed way of organizing a curriculum"* isn't appropriate because it would be *"too constricting."* (general studies teacher, group 5) Yet a third teacher says: *"I may see interdisciplinary as one type of thing and another teacher may see it differently. In each class, there's something different going on. I think the variety is good."* (general studies teacher, group 5)

Other interpretations of interdisciplinary education:

• When defining interdisciplinary education, some students confine their outlook to what the Center calls "interdisciplinary studies," a series of eight classes meeting once a week for four sessions each.

• Throughout the focus groups, students and teachers use interchangeably a number of different words or phrases for interdisciplinary concepts they consider as similar, such as: related, connected, integrated, infused, humanities classes, cross-disciplinary, team teaching, class swapping, interrelated, linked subjects, holistic education, inter-arts, cross-arts, collaboration and "everything tied together."

• One teacher remarks that term, "interdisciplinary," does not capture the spirit of what this type of education can be. His point is that "interdisciplinary" sounds formal and structured, rather than holistic and creative. It emphasizes the existence of individual disciplines rather than acknowledges that *"experience or existence precedes discipline."* (general studies teacher, group 5)

3. Teachers articulate a mission for interdisciplinary education.

According to Arts High School teachers, the mission of interdisciplinary education is to awaken in students personal connections with information so that they become more motivated and committed to learning about and celebrating existence. The personal connections engage students completely on emotional, physical, spiritual, and intellectual levels.

Many of the faculty members feel that to teach their own subjects well, it is essential that they teach in a manner that helps students make personal connections.

4. Students are divided on how essential interdisciplinary education is to the Arts High School

Most students consider this aspect of the school to be very important. Some consider it to be absolutely essential; others feel that the school's uniqueness is its arts focus. Were the interdisciplinary aspect to be diminished, the school's essential nature or purpose would not change.

The following two comments during a discussion in one focus group demonstrate the range of student opinion: *"Interdisciplinary is vital to get the most out of life. I think that interdisciplinary helps me become a more well-rounded person and a more knowledgeable person. It helps me decide what to do with my life and how I want to do it."* (student, group 4); and *"It's not needed as an integral part of this school. The reason this school exists is because of the arts, not interdisciplinary."* (student, group 4)

Occasionally, students speak of interdisciplinary educational experiences in a manner than suggests pleasure, but lack of necessity. For instance, a student spoke of having an artist in another field as a guest in his arts class: *"It's a nice break from the grind your arts area can fall into sometimes."* (student, group 1)

5. While most students appear committed to a separate interdisciplinary course, they have a range of opinions about the successfulness of the 1990-91 experience. [5]

Many students describe positive experiences in the Wednesday interdisciplinary classes related to a satisfying final product, the inherent interest of a topic, or an approach which was *"less academic, more physical."* (student, group 1) One speaks of learning a new concept: *"a healthy contradiction or a new way of looking at a definition."* (student, group 1) In other examples, it is a small thing, such as a quotation, which "changed *me a bit.*" (student, group 1)

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[5] In an attempt be clear and consistent, terminology used by students and teachers to discuss the Wednesday series of classes in interdisciplinary education has generally been changed to the language used by the Minnesota Center for Arts Education. Thus, interdisciplinary studies describes one means to deliver interdisciplinary education through a series of eight individual classes, each meeting four sessions.

Students and teachers use a variety of terms for these same things. For instance, students and teachers frequently refer to the year-long studies as a "course" or "program" and call the classes, "units," "IDs," or "interdises."

A counter opinion related to the importance of the final productions is occasionally expressed: *"Interdisciplinary classes are too oriented toward end products."* (student, group 1)

Some students like the element of surprise and risk in the learning experiences. To one student, a mixed media performance was memorable because it was *"all jumbled up and then it came together. I didn't think it would work and then it did. I liked that."* (student, group 4) To another student, *"It suits my personality type when all this stuff is plopped down on the fringes and then something is said that ties everything together. It's like putting the last chemical in that makes the chemical reaction occur. You understand everything."* (student, group 3)

As students describe memorable experiences, they most often apply the word "fun" to ones they enjoy or to what was missing from ones they didn't enjoy. *"This school is so serious. I wish we could have fun. I think the interdisciplinary studies is the perfect spot to explore and relax."* (student, group 3) Another says: *"It's fun to do something different."* (student, group 1)

A few classes from the current or previous year's interdisciplinary studies appear as favorites among many students and are mentioned throughout the focus groups with remarkable consistency. The favorites tend to be ones where the topic was of personal interest or where an object or event was created. In the case of some classes, students are divided. One student might find "fascinating" what another student might "hate."

When asked to describe learning experiences during the Arts High School's Wednesday interdisciplinary studies course that were intriguing or memorable in a positive or negative way, the majority of the examples are positive. These examples represent the students' opinions:

> *"During the 1989-90 school year we had a class — I don't even remember the formal name — in which we had to depict a period of time in history using the music of that time period. We collaborated with five students in a group and made a film. I was impressed with how well everything clicked. The end product was pretty good."* (student, group 1)

> *"Math is my worst weakness and dance is my strongest strength. It was neat to tie them together in a class and use my body to do geometry. We had to interpret a book, Flat Land, as a dance."* (student, group 1)

> *"I liked the mandala class last year. It sticks out because it was a real kinetic class. Every student in the school worked on it and I liked that. The canvas mandala is hanging in the cafeteria now."* (student, group 1)

> *"I thought the mandala class was intriguing also. It was annoying and intriguing because students had to work out the details with everyone else. You'd have these large arguments and you got to see how people think differently. You're forced to evaluate how strongly you want to push for your own idea."* (student, group 1)

"'Her Story' was a memorable unit for me because it made me realize how young the women's movement is and how women still don't have rights equal to men." (student, group 1)

"I saw a lot about women in the 'Cultural Transformations.' It fascinated me, all the ideas, such as the change from nomadic to agricultural to industrial society, it floored me."
(student, group 1)

"I thought 'Science of Chaos' was neat because I'd never heard of the concept and it was related to all the general studies."
(student, group 1)

"I despised the 'Science of Chaos.' The class was trying to define what can't be defined. We had to write response papers to articles which I didn't grasp at all. It was too academic."
(student, group 1)

"Last year we had a class — I can't remember the title — but our assignment was to make a movie using music in a time period. There was a lot of personal research required. We learned about media arts, using equipment. We learned about music and a story line. It worked really well." (student, group 2)

"I remember an interdisciplinary from last year, the mandala one. I carried on the mandala theme in my own artwork."
(student, group 2)

"I liked 'Her Story' because I could relate to the topic, the way women are stereotyped, the way they're portrayed in media."
(student, group 3)

"'Her Story' included what's going on in the world right now so it felt alive, very contemporary." (student, group 3)

"I liked the spirituality one best. It sticks in my head the most because the content interests me." (student, group 4)

"One that stuck out was the "Science of Chaos' which was my least favorite interdisciplinary because what was being taught in that class was the exact opposite of what we were learning in physics class at the same time. It was frustrating."
(student, group 4)

"I didn't like the 'Science of Chaos' for a different reason: we'd sit and listen. We didn't get to be creative or apply what we learned or demonstrate what we thought through a project."
(student, group 4)

"Last year there was an interdisciplinary where we cooked. We made ourselves a really healthy dinner. We talked about nutrition. It was neat." (student, group 4)

"One I really enjoyed was the painting of the big medallion which we hung for display. I thought it was really fun. They taught us a number of things and then we did it. It was a doing thing instead of a sitting down and hearing all this stuff." (student, group 4)

Students experience difficulty with the once a week meetings of the 1990-91 schedule, although some *"like the lack of routine in the schedule."* (student, group 3) The majority of students scramble to meet deadlines and some feel "under-*self-accomplished*" (student, group 1) in the content and in the final production. Some advocate classes longer than four weeks: *"You can only puncture the surface in each interdisciplinary."* (student, group 4) *"Many classes are low on content: we need longer classes."* (student, group 4)

A number of students oppose the reading required in the interdisciplinary studies' classes. Those who speak most vociferously against the reading are students who contrast this year unfavorably with the previous year. The weekly assignments feel like *"busy work,"* to many. (student, group 2) *"There's so many little homework assignments. Because of time, I miss out on going in-depth on a large project."* (student, group 4)

With great frequency, students express a wish for greater clarity in the teachers' intentions for interdisciplinary classes, including what subjects will be connected and what evaluation will occur:

"If there are expectations for the individual interdisciplinary classes, I want them clear so people can be evaluated on their progress towards them." (student, group 2)

"Last year, they would point out the connections between the two things. This year the connections are very vague and they never point out the connections. They don't sit down and say, 'This is what we're trying to get at.' They focus more on the subject than the connection. I think that the connection is more important than learning about the subject." (student, group 4)

"*At the end I thought: 'Why are we doing music and movement when we've been doing theory stuff? I didn't see how it fit."* (student, group 1)

Students believe the connections between the subjects are not always "*effectively related.*"(student, group 1) "*The problem with some classes is that they don't incorporate two subjects. First they offer one subject, then they offer the other and students are supposed to make the connections in their final presentations. I want the subjects to be taught together."* (student, group 3)

"Two subjects are in the same class, but each are taught separately, first one, then the other. I don't think this is interdisciplinary." (student, group 2)

Sometimes it appears to students as if the arts aspect is not fully integrated. *"It's supposed to be a combination of the two, but sometimes the arts are just token."* (student, group 1)

Even with all these concerns, many students register their desire to preserve a separate time for interdisciplinary studies. For one thing, students feel it provides a place to learn about issues that don't necessarily come up elsewhere. "*The special interdisciplinary is a place to fit miscellaneous topics that might not evolve elsewhere, like spiritual transformations, women's rights, rites of passage and culture as a whole. There's a place for these topics in the interdisciplinary course."* (student, group 1)

Students want the student body *"to respect interdisciplinary,"* (student, group 3) and offer various and sometimes contradictory suggestions about how to accomplish that, such as through maintaining or changing the current credit system:

"The Wednesday classes do need to be for credit in order for students to take them seriously, but I don't want it to be so academic." (student, group 1)

"I don't want Wednesday interdisciplinary graded, but having student outcomes is O.K." (student, group 1)

"I agree that the class should count towards graduation and have weight in the real world." (student, group 1)

"The Wednesday 'ID' shouldn't be like a collar students wear." (student, group 1)

Other suggestions for gaining student respect for the program include offering more intensive sessions, such as those that would meet more frequently or over longer periods of time, and providing choices in the topics. Some students volunteer to be part of the process of selecting and refining topics. A few students feel that they may not know in advance what they'd find appealing.

Students refer to the benefits and liabilities of working in group situations. One student, for instance, says he likes the group debate and argument which is *"annoying and fascinating."* He likes that he is *"forced to interact"* with people of divergent opinions. (student, group 1) The majority of references to group situations are to the *"bad press"* that groups give certain units (student, group 2) and the need to change groups throughout the year.

One student expresses his ambivalence about the need for a separate class in this way: *"I think it's important to have interdisciplinary explicitly laid out. On the other hand, the school might gain more opportunities for continuous interdisciplinary learning through general studies and arts areas."* (student, group 1)

Another says, *"It seems to me as if interdisciplinary should go on. It's something that's continual, that you're always seeing the connections. The four week class approach makes things end abruptly without further application."* (student, group 4)

6. Some faculty appear committed to a separate interdisciplinary course while others feel that a separate course isolates interdisciplinary education too much.

Some teachers feel that the separate course plays a role in underscoring the importance of interdisciplinary education, of making sure that it occurs in a significant way. *"Don't leave interdisciplinary to chance; provide a structure, build it into the system,"* a teacher says in support of a separate block of time for interdisciplinary education. (general studies teacher, group 5) In words similar to those of a student quoted previously who has ambivalence about a separate course, a teacher discloses: *"Part of me says that we need a separate place to make interdisciplinary happen, a chunk of time with some people working together. It's good and practical. But part of me is uncomfortable with a separate class, using the old familiar framework."* (general studies teacher, group 6)

Other faculty clearly feel that delivering interdisciplinary education through a separate course goes against the concept of interdisciplinary. *"I agree with everything the other teachers say about the need for interdisciplinary education. But the delivery is at issue. When interdisciplinary is an extra added-on class, it's not going to be successful. It needs to be integrated."* (general studies teacher, group 5) *"Sometimes it appears that the interdisciplinary idea has become almost canned or forced in that we do interdisciplinary, then we move back to our regular disciplines."* (general studies teacher, group 5) A longing is expressed for a coordinated, integrated effort across the curriculum: *"I want us all to take off like spokes from a wheel."* (general studies teacher, group 5)

Many teachers do not speak of the schedule as an either/or situation, but want a separate time for interdisciplinary studies and greater integration: *"I like the idea of Wednesday being different, a set aside time for play, and I also like the idea of more cross-disciplinary planning where things happen within our classes."* (arts teacher, group 6) *"I think both settings for interdisciplinary work — a separate class and more interdisciplinary in the classroom."* (arts teacher, group 6)

When teachers discuss more integration of fields and concepts outside of a special class, many refer to the need for coordination and preplanning of such an effort. Most think that *"we do need forced interaction among the teachers,"* (general studies teacher, group 5) but another opinion is also voiced: *"I prefer interaction with the faculty that's spontaneous, not artificial, planned or forced."* (general studies teacher, group 6)

Some teachers worry that the current delivery of interdisciplinary education through four week individual classes tends to be shallow if students do not have significant core information, skills or background in the subjects being combined. "I *have to water down my subject to something with no depth. I feel we're just skimming the surface."* (general studies teacher, group 5) *"Students don't have enough background historically, socially or whatever to be able to handle the synthesis of these ideas."* (general studies teacher, group 5)

When teachers describe memorable experiences in the interdisciplinary course, they most often relate student assimilation of offered material as demonstrated by final presentations. They emphasize how much they learn from the students:

"I felt honored to be allowed to hear some of the students' products which revealed a great deal about the students' own concerns and lives." (general studies teacher, group 6)

"They took the teachers' content and they filtered it through themselves and through their art areas and all added a piece and gave it back to the group." (general studies teacher, group 5)

"Kids put together a presentation that had an emotional and political statement about war in general. It was just incredible. They used the material we had given them, and they took it further, it was really moving." (arts teacher, group 5)

"It wasn't the facts that they brought in, it was thoughts about their lives and how their lives are organized. It's more powerful than fact." (arts teacher, group 5)

A teacher offers an explanation of the main quality in interdisciplinary studies that encourages profound experiences for students, and for the teachers as witnesses: *"One of the greatest strengths is that the individual classes during the year are structured to an extent that students have the material that they need to read, they have questions to help them discuss the material, but they have a lot of space to discuss and use it as they want. The 'wows' happen more often in this class because there is that option to either go way out on a limb and explore something, or not to do it. The more structure teachers put into a course like ours, the less chance that the kids have to really go out on a limb and explore things."* (arts teacher, group 5)

Faculty enjoy the team-teaching aspect, and the break in the week's schedule provided by the mid-week interdisciplinary classes, although they acknowledge problems with the 1990-91 schedule. Lack of change in the student groupings and the once a week deadlines that engender hasty, last-minute student preparation are seen as the main problems of the schedule. Some presentations *"are thrown together"* (general studies teacher, group 5) Teachers also perceive that the risk involved in self-revelation in front of a group can be difficult for some students.

Similarly to students, teachers allude to the formation of *"group personalities"*, some with *"negative, anti-risk-taking leadership"*. (arts teacher, group 5) Some teachers share in students' opinion that the reading and answering of questions is *"drudgery"* for the students. (arts teacher, group 6) A few teachers feel the imposition of requirements from the outside: *"I was instructed to have more reading, more rigor in my course."* (arts teacher, group 6)

Teachers, as with students, want the class to be more important to students: *"I'd like kids to learn to value unstructured time. I wish they'd think of this class as revelation time, not wasted time."* (arts teacher, group 5)

7. In the perception of students and staff, interdisciplinary teaching and learning occurs during the general studies and arts classes. To many, the opportunity to expand this is positive. To some students, integrating more interdisciplinary education into general studies and, to a lesser degree, the arts, may negatively affect core or foundation knowledge.

Teachers and students especially offer a significant number of examples of interdisciplinary teaching and learning in their arts and general studies classes. Generally, these are individual lessons or experiences that connect general studies and a facet of the arts. For example, a concept in math, science or social studies is taught to students and they are asked to give presentations using dance, theater or another art area that demonstrate their grasp of the concept. Some teachers and students refer to an overall teaching style where frequent connections are made.

Specific references by students to interdisciplinary learning in general studies classes are as follows:

> *"Math class conveys a lot of things visually and we do some physical things. Recently, we presented the Fibonacci Sequence through an art example. Some students danced, some made a collage, some played a musical instrument to demonstrate the sequence."* (student, group 1)

"Our math class took a field trip to the Minneapolis Institute of Arts and looked at artwork from a mathematical vantage with ratio, proportion and such." (student, group 1)

"In American studies, we talk about artists in history. A lot of art is infused in that class." (student, group 1)

"In physics, we had to read a play about Galileo and a play in the fugue style. Also, we did angular momentum which is dance physics. Next we're going to study waves, sound and music." (student, group 1)

"In physics, we studied how dancers do their turns and how their bodies work, scientifically. Last year, we did a big physics research paper on musical instruments and sound waves." (student, group 3)

"In French class, we studied the history of Paris and looked at art museums there and at the different cultural events that take place. We studied French literary writings and are going to watch a dance performance based on the Ballet Russe." (student, group 3)

"The French class and media class went on a field trip to see the movie, 'Cyrano.'" (student, group 4)

"In Spanish, we're composing, writing, memorizing and reading Spanish poetry and learning about Spanish poets." (student, group 4)

Some teachers, too, describe the infusion of interdisciplinary into their classes. *"In physics classes, we do a number of things involving writing. Also, we make many comparisons between reductionist and holistic thinking. We talk about the artist's role and the scientist's role. In one exercise, students took a painting by Seurat and showed how little parts of it look abstract, like little dots, but when the picture is seen as a whole, the dots make a form."* (general studies teacher, group 5)

People speak of the general studies classes forging linkages between the subject and *"real life,"* (student, group 2) including what is useful. *"We talk about a lot of things that apply to the world and apply to our life. We do current events assignments that keep us up-to-date on things that are going on. It's a conscious effort to apply things."* (student, group 2) Students and teachers provide examples of appealing field trips that help relate the learning to community resources. One student practices a language during a meal at a restaurant where that language is spoken. *"In science, we learn about how my car is rusting and why cars should be more gas efficient and things like that."* (student, group 2)

The main reservation of students regarding interdisciplinary in their general studies courses is concern that they may not be gaining proper training in the subject. *"I'm going to college and I'm worried about my preparation in the academics. On one hand, I don't want teachers to just lecture on their subjects, but on the other hand, I'm worried that I'm not getting enough basic information."* (student, group 3)

Another student notes: *"For me, this general studies class didn't stay on track enough of the time. I didn't get enough solid structure. It's too related. I can't keep my foundation underneath it to really apply the rest."*

"I don't think enough is being taught on the basic level to be able to take off from it." (student, group 2)

"I'm growing in a lot of ways, but I don't think I'm getting really smart at academic college preparation. I'm going to know how to manage time and stuff like that, but I'm anxious about academics," worries a third student. (student, group 3)

Yet a fourth summarizes his feeling about the current level of general studies curriculum integration in this manner: *"It's a bit too much of a good thing."* (student, group 2)

Students cite examples of arts area classes incorporating general studies or making connections with other arts areas, applied arts skills and with the community, as follows:

"In theater, we did a play set in the Great Depression, and studied its historical context." (student, group 1)

"The dance area here is really involved in outside performances around the Minneapolis area." (student, group 1)

"We do a lot of music in dance." (student, group 1)

"We have dance-related time in our dance area where we study things like anatomy, dance careers, community dance groups. It's related to other things; it's very interdisciplinary. So are the on-going assignments." (student, group 2)

"Last year, in music, we talked about mathematical concepts, like tempo." (student, group 1)

"The biggest interdisciplinary experience we had in our music class was an opera we wrote ourselves." (student, group 1)

"In our art history class, we had a guest teacher. He gave us a 750-word assignment. I thought: 'We're never going to finish that,' but he made the class really fun. He let us talk about different rites of passage. He gave us factual information, we wrote the paper, then we made something physical or acted out an idea. It was a combination of everything: writing skills, oral presentations, reading, history, art. The thought process of bringing all these things together was just great." (student, group 2)

"In literary class, this past week, we've been working with other arts areas, such as the dancers and some visual artists. Today, we listened to music and went through warm up stretches and danced. Then we sat down and wrote to see if our writing has changed, just to experiment." (student, group 3)

Students express some concern about greater incorporation: *"If interdisciplinary is integrated into our arts areas, don't take away from the focus on people's art. Students need a lot of time in their arts areas."* (student, group 1)

All of the teachers and a few of the students recognize that *"the communications program is delivered across the curriculum so almost everything done is interdisciplinary."* (general studies teacher, group 5) One student refers to applying an interdisciplinary concept to a special communications assignment: *"For my senior project in communications, I made an interdisciplinary project between music and literature. I wrote a piece of music to go with one of my poems."* (student, group 4)

A few references are also made to interdisciplinary linkages in situations other than classroom settings, such as lyceums, "common experiences," and other events: *"A lot of effort is made to bring artists in for our benefit, and to bring us to other artists."* (student, group 1) *"There was a performance piece this year where dancers from the school and artists worked together."* (student, group 1) *"Last year, we had an interim with academics and arts. The first day we were given handouts and we studied history from an evolutionist point of view. We were each given a different time period and we gave a presentation to the rest of the school. People learned a lot from that."* (student, group 2)

8. **The majority of interdisciplinary education at the Arts High School relates the arts and non-arts areas. Students and some faculty express an interest in more inter-arts education.**

Students at the Arts High School specialize in one of six arts areas. Many students speak of wanting more interaction between and among their specialty and others: "It *seems as if the other arts go on behind closed doors. I want more contact between the arts areas."* (student, group 4) Some male students expressed particular interest in learning more about the media arts, and more about proper use of the equipment in other arts areas so that they can explore these as part of independent or group assignments. Some students and teachers mention an expectation that students attending the Arts High School would spend *"twenty percent of their program in a second art area."* (arts teacher, group 6)

Some arts teachers, too, want association with other arts areas, especially with the students in those programs. A teacher points out that the Wednesday interdisciplinary block is currently *"the one chance arts instructors have to meet students in other fields."* (arts teacher, group 5) Another arts teacher concurs that, without planned contact with the other arts, *"I get stuck in my studio, my niche."* (arts teacher, group 5)

Students offer various suggestions about such contact which include an interim break in the school year to allow exploration in another field and scheduled visitations from students in one field to another. The current opportunities for electives do not appear to students to be a viable option for this purpose, although some students *"don't want the inter-arts forced on kids. It reminds me of what happens in junior high when they force kids to take art."* (student, group 4)

9. **There are significant concerns among teachers and students about assessment of interdisciplinary education.**

In many teachers' perceptions, a new type of assessment must be developed to be specific to individual students' growth and application of knowledge. *"The expectations have to be for what the students themselves get out of it. How do you handle the evaluation of private vision?"* (arts teacher, group 6)

The assessment must be flexible so that teachers can alter the stated outcomes as the teaching and learning progresses, including incorporation of unanticipated results. *"You can plan activities, but you can't plan results."* (general studies teacher, group 5) *"With interdisciplinary, you can't always predetermine what will happen when you put the subjects together."* (arts teacher, group 6)

The assessment must not rely upon productions or assignments: *"In interdisciplinary, do you really need a finished product to assess? I think the process is more important."* (general studies teacher, group 6) A teacher describes a class based on making murals where *"no murals were finished. Some groups did a lot of planning, some got stuck in group process."* He goes on to say he was comfortable with this since the learning came about through the attempt itself. (general studies teacher, group 6)

Some teachers believe that an important aspect of interdisciplinary is for students to simply experience new things. *"Assessment can actually get in the way. Sometimes the correct way is to just make sure the students attend the class, just show up, be present."* (arts teacher, group 6)

In specific reference to the 1990-91 Wednesday interdisciplinary block, both students and teachers feel uncomfortable with the assignment and assessment process. A number of comments speak to this:

"There's too much emphasis on the assignments in the Wednesday interdisciplinary class." (arts teacher, group 6)

"I don't want the Wednesday interdisciplinary graded." (student, group 1)

"The threat of passing interdisciplinary makes students do the assignments in a perfunctory way, just to pass. But then they won't do the assignments if they aren't required." (student, group 2)

"Pass-fail makes interdisciplinary seem unimportant." (student, group 4)

"Assessment has become a paper chase for the interdisciplinary course. We've created a monster this year." (general studies teacher, group 5)

Other interpretations related to assessment of interdisciplinary education:

• There is an apparent dichotomy in the way that teachers discuss final presentations of students. When asked to describe memorable interdisciplinary teaching and learning experiences, they most often speak about dynamic, emotionally appealing final presentations that demonstrate how students have related to the learning. However, in speaking about assessment, the role of final presentations is diminished as unessential to evaluation of student learning.

• Some of the teachers' attitudes regarding assessment may have been affected by the timing of the teacher focus groups. One focus group was held on the day that assessments of student work were due to the Center's administration. A teacher refers to the *"Student Learning Plan syndrome"* that teachers attending the focus group were currently experiencing. (arts teacher, group 6)

10. Arts High School faculty find their team teaching satisfying and offer a number of insights into the experience.[6]

Team teaching is an integral part of the interdisciplinary studies classes, according to teachers, and is frequently essential to other situations as well. Teachers believe that students benefit from observing adults working side by side with one another, encountering their colleague's fields. *"I think it's especially valuable for students to see their teachers working together productively and respecting and investigating areas outside the realm of their expertise."*

Team teaching, especially with a compatible partner, can be tremendously enriching for individual teachers and an entire faculty. Through such close work together, teachers gain feedback on their own teaching, exposure to new ideas and appreciation of their peers. A plethora of comments speak to this:

"As a teacher, I learn from the other teacher. I see new teaching styles."

"I expand my world. I enjoy interacting with colleagues, engaging in the dialogue."

"It's a way to get to know the other teachers in a more significant way."

Compatibility between teachers, noted as the important factor in the teaching relationship, is defined most often in terms of personality, and occasionally in terms of teaching philosophy or style. *"I suppose personality clashes could occur,"* writes one teacher, and another: *"Difficulties could arise if the philosophies are violently in opposition."* Each of the preceding respondents add that they are responding hypothetically and they haven't experienced such difficulties at the Center.

The need for sufficient planning time appears critical when a second teacher is involved in interdisciplinary teaching. These answers are in response to a question about problematical aspects of team teaching: *"Time to plan"* and *"Time to get together and talk and plan."* Two other problem areas some teachers encounter are the lack of know-how in joining areas and inadequate time to go into depth.

Teachers at the Arts High School most often name flexibility and enthusiasm as their primary strengths as interdisciplinary team members. As primary weaknesses, they most often name lack of preparation. By lack of preparation, they are apparently thinking both of the short run, in terms of insufficient planning time, and of the long run, in terms of limited background in the other area and in team taught situations.

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[6]All quotations in this section are taken from anonymous teacher questionnaires administered at the conclusion of the focus groups. It is not known whether the quotations cited are from arts or general studies teachers.

11. Students and teachers express remarkably similar outlooks about interdisciplinary education and the interdisciplinary studies at the Arts High School, with a few notable differences.

There is remarkable congruence in opinion between students and teachers and throughout the six focus group meetings. The similarities are striking in the way both groups define interdisciplinary education, perceive the lack of opportunities in the general education system, consider the applications of interdisciplinary education at the school and name the factors contributing to successful experiences or programs.

Teachers on staff seem to be very in touch with their students. Their remarks about student behavior coincide with what students say about themselves, such as how they are scrambling to complete assignments the night before the mid-week special interdisciplinary class. Students occasionally refer to teacher opinion or behavior that suggests close observation and interaction. Here are two examples:

"I know after talking to some teachers that it was an organizational nightmare for them to create these interdisciplinary units. They'd meet during the weekend. They worked their butts off. Those people put in more hours and more time than any of us do." (student, group 4)

"I had lunch with a student I respect a lot and he said, 'You know, interdisciplinary is just a paste on. It's like you forget you have it. It's not integrated enough." (general studies teacher, group 5)

There were many times when people from different focus groups used similar language to talk about an issue, such as how best to encourage interdisciplinary education:

"The best schedule would remain flexible with a feeling of newness. You can't overly plan 'ID'. The best thing would be if it just happened where you found it instead of trying to force it." (student, group 1) and *"I prefer interaction with the faculty that's spontaneous, not artificial, planned or forced."* (general studies teacher, group 6)

The most notable difference in perception and opinion is that students clearly favor a separate interdisciplinary class, even with reservations about the effectiveness of the current year's classes. Teachers are more divided about delivery of interdisciplinary through the vehicle of a separate class, but express more consistent pleasure in the classes. Teachers saw some students create unusual productions that demonstrated internal integration of the material presented in class. Teachers also say how much they enjoy the opportunity to work side by side with another teacher.

Students, much more than teachers, are reluctant to support greater integration of interdisciplinary education into general studies or arts classes. In general studies, they worry that they will not obtain foundation knowledge. In the arts, they are concerned about getting enough time to concentrate on their discipline. Among students, support is found for more inter-arts activity.

12. According to direct remarks of teachers and inference from students, a number of specific factors influence the success of interdisciplinary education.

Among the factors that may positively affect interdisciplinary education:

• a flexible, open attitude on the part of the teacher: *"It's the attitude teachers bring to interdisciplinary that's important."* (general studies teacher, group 6) *"Teachers must find the internal willingness to take the risk."* (general studies teacher, group 5);

• adequate planning time for the teachers: *"I think preplanning has to be very long term and with a lot of time. We almost need a whole summer and then we'll make a glow on the horizon."* (arts teacher, group 6);

• pre-service and in-service education for teachers: *"Many teachers just haven't been exposed to the concept of interdisciplinary. This is why interdisciplinary isn't strong in a lot of schools."* (student, group 2);

• use of a variety of participatory, hands-on teaching and learning strategies: *"You get your hands dirty."* (student, group 1);

• willingness to give more than usual control to students for the aim and methods of the learning experience: *"You have to honor the student and the student's input and ideas. Students are major contributors to an interdisciplinary experience."* (general studies teacher, group 5) and *"I like it that students get to find out things they want to find out about."* (student, group 2);

• permission for students and teachers to be playful and to experience learning together: *"When teachers are creating the interdisciplinary experience right along with the students, it's very important to the success of a unit , class or program. It needs to be spontaneous and creative."* (student, group 4);

• discovery of natural linkages between areas: *"Kids really resent it when it's contrived, as if you're trying to put a square peg in a round hole."* (general studies teacher, group 6);

• inclusion of the arts: *"Arts can be used effectively to connect all things in life."* (arts teacher, group 6);

• a reasonable number of students: *"Successful interdisciplinary has to do with the size of classes. You get more out of interdisciplinary classes that are smaller."* (student, group 2);

• availability and use of various materials in addition to those in print format: students refer to classes with film, video, slides and art materials available;

• opportunities for team teaching: *"It's great for the teachers to work together and for the kids to see the teachers interacting, enjoying each other's areas, learning together."* (arts teacher, group 5); and

• opportunities for student cooperative work as well as individual work: *"Teamwork! Students have to learn to work together in groups."* (arts teacher, group 6).

Students and teachers feel sympathy for teachers in settings where these factors don't exist: *"I think it must be very difficult for teachers to include interdisciplinary in ordinary schools where there isn't all the support."* (student, group 2)

Some teachers perceive that it is difficult to translate interdisciplinary units to other teachers. *"You can't fight the inevitable evolution of an interdisciplinary experience. It's never the same twice."* (teacher, questionnaire)

A few teachers wonder about the role of student and teacher understanding about the subjects or concepts being combined. *"The big question in teaching in an interdisciplinary manner is how to choose what basics to give them."* (arts teacher, group 5)

Most teachers and some students feel that broad, universal themes not only unify various teachers' programs in the school, but also provide a serviceable way to look at issues and ideas from the vantage of various subjects. Teachers refer to creating mental pictures, of helping students understand big concepts. *"It's important to have an evocative, expansive theme that encourages everybody to think freshly and in new ways, to find new applications. It needs to touch on a vital aspect of life."* (general studies teacher, group 5) Students who speak against a theme-based approach think that basing an experience on a chosen theme or overarching concept might be constricting.

Other factors that influence the success of Interdisciplinary Education:

• To Arts High School teachers, the factor of flexibility in interdisciplinary experiences has many dimensions. It includes permitting students more control over means and ends. It appears to be the essential ingredient in the approach of these teachers because it emphasizes *"respect for kids as learners, for what they want to get out of it."* (arts teacher, group 5) The very element of risk — meaning, that some students may not succeed — appears to be important to interdisciplinary learning, in the opinion of the faculty.

• Teachers speak about requisite qualities of teachers who wish to teach in an interdisciplinary fashion. One teacher referred to the *"paradox of interdisciplinary"* as being the need for teachers to *"find a balance between being directive and non-directive, knowledgeable but ignorant."* (general studies teacher, group 5) Another said that such teachers have to be comfortable with *"ambiguity and ambivalence."* (general studies teacher, group 5)

SCHOOL LEARNING ENVIRONMENT

The primary reason for the focus group study report was to obtain faculty and students' perspectives on interdisciplinary education and its applications at the Arts High School. In the course of analyzing the data, additional information was discovered, mainly related to perceptions about the learning environment in which the interdisciplinary studies program exists.

Faculty and students, within the relatively brief life of the Arts High School, have developed a high level of pride in their school as a unique and important entity. Students and staff alike appear excited to be pioneers in an educational venture with the freedom to experiment.

The atmosphere of the school is portrayed as more flexible and vital than many schools. Students *"are encouraged to work, rather than required."* (student, group 1) Other references related to the atmosphere of flexibility, include variations in the week by week schedule; opportunities for team teaching and student group work; and open-ended class assignments which invite student freedom or choice in how to complete them. *"My best experience came out of an unstructured class."* (student, group 2)

Among the most rewarding aspects of the school for students and teachers are positive relationships between and within these groups. Students feel accepted and encouraged in their arts interests and point to positive relationships with the staff. These relationships are characterized by cooperative interaction and greater informality than previous school experiences. As a contrast, a few students refer to adversarial interactions with faculty in previous schools: *"It was us against them."* (student, group 4)

According to students, this school *"is closer to the real world"* (student, group 2), including metropolitan cultural attractions. *"This school is preparing me for a lot more than any other school could. Other schools give you fact and information, but here we apply these things to everyday life. While other kids are walking around as human calculators, I'm able to apply what I learn."* (student, group 3)

Many say they are *"growing personally."* (student, group 2) *"I like the college atmosphere. I feel grown up, living away from home. I like the way the classes are run — no bells and the teachers trust the students."* (student, group 3)

Students occasionally refer directly to an environment that is conducive to artistic growth, including the permission to express a range of ideas or feelings. For instance, one student says: *"I like the freedom to do outrageous things in my art area."* (student, group 4) Students also report great satisfaction with the quality of artistic training that they receive at the school.

The teaching staff value the collegial relationships with one another. They benefit from the close work with partners in team teaching situations, according to results of a questionnaire administered at the conclusion of the teacher focus groups. They describe one another as *"multi-talented."* (general studies teacher, group 6)

Teachers say they enjoy working with students who have high motivation, especially in terms of their arts areas. Among other pleasures of teaching at the Arts High School are the greater teacher choice in the content of the curriculum, and the emphasis on creativity at the school which encourages new approaches to teaching. *"By the creative energy of the students and faculty, I am pushed forward to try new things, to risk, to completely change the way I've done things in the past."* (general studies teacher, group 5) Arts teachers relish that *"the arts don't have to be sold to students here."* (arts teacher, group 5) Some general studies faculty refer to the change in status their fields experience at the Arts High School since the arts are the primary attraction for most students.

Some faculty and students are more comfortable than others with the flexibility of the Center, including, as a teacher remarks, "with experiments that *don't always work."* (arts teacher, group 6) Some students feel under artistic or creative pressure to constantly outdo themselves. Says one: *"There's a lot of competition in this school and the atmosphere is tense."* (student, group 3) Says another: *"There's great stress in this school always to be so creative."* (student, group 2)

Students who were present during the previous, first year of the school frequently compare years. They express nostalgia for the start-up time which one student described as *"stressful, but neat."* (student, group 4)

Some faculty and a few students express concern that this school will become *"a normal school."* (student, group 1) One teacher warns, *"All institutions want to become institutionalized."* (general studies teacher, group 6) Resistance to institutionalization is voiced in various ways. One teacher, as part of his argument for a separate interdisciplinary block course, explains that he thinks *"We're dangerously close to being just another high school."* (general studies teacher, group 6)

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Arts High School teachers are on both sides of the fence about the need for a core curriculum that is definable and the same for all students. These two remarks show the range of opinion: *"Students need to know some core material, some classics, for instance,"* (general studies teacher, group 5) and *"The school doesn't have a core curriculum. Students can learn different things, and that's OK."* (general studies teacher, group 6) The outcome of this debate at the Arts High School may affect all program efforts, including interdisciplinary.

Through the language that they use, students suggest that the arts are not "academic." They refer to the general studies as the academics, and they place the arts in another category. The interdisciplinary course is seen as a hybrid that's becoming *"too academic."* (student, group 1)

Teachers and students are aware that certain aspects of the Arts High School, such as scheduling and the teaching of new interdisciplinary classes, are in flux because of the newness of the school. They refer to this with understanding: *"The Arts High School will need to do things over a few times to learn by doing,"* says a teacher in reference to scheduling. (general studies teacher, group 5) *"Teachers are still experimenting with how to combine subjects,"* says a student. (student, group 3)

APPENDIX#1:

MISSION OF THE MINNESOTA CENTER FOR ARTS EDUCATION

Mission

The Center for Arts Education, a statewide public high school and resource center, was created by the 1985 Minnesota State Legislature to enhance educational opportunities in the arts—dance, literary arts, media arts, music, theater, visual arts, and interdisciplinary studies for students and educators, from Kindergarten through 12th grade, throughout the state. The Center provides diverse services without financial barriers to educators and students through its statewide resource programs and its arts high school programs. The arts high school programs identify and provide programming for students who demonstrate potential or developed artistic talents.

Conceptual Framework

Recognizing that the arts are a basic form of human cultural expression and are an essential component of a democratic society, the Center for Arts Education develops and offers programs reflecting that:

- the arts significantly interrelate with other areas of human concern;
(this provides the basis for interdisciplinary studies, integrated programming, learning the arts within their own multi-faceted context as well as within a variety of broader ones)

- creative/imaginative endeavor provides the basis for initiation of artistic and academic pursuit;
(this provides the basis for creative/imaginative skills being taught in balance with technical skills and the basis for teaching complex thinking)

- individuals interact within diverse cultural systems;
(this provides the basis for communications skills, partnerships, cooperative and networking activities, a multicultural/gender-fair focus, and a rationale for leadership development)

- learning is a developmental process;
(this provides the basis for the organization of curriculum and instruction into developmental sequences according to the needs of the individual and knowledge base of a subject area)

The Board of Directors has affirmed its commitment to pursuing employment practices that create opportunities for all persons without regard to race, creed or religion, color, disability, gender, marital status, national origin or ancestry, or political affiliation. In addition, the Board is committed to fostering the health and professional education of its employees and to promoting a multicultural/gender-fair focus in all its programs.

The Center has established the following goals for its Resource Programs for fiscal years 1990 and 1991 (July 1, 1989-June 30, 1991):

- Provide continuing education and support for professional development in arts education for educators and artists;

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- Provide opportunities for students(K-12) to increase their awareness of and interest in the arts and develop their artistic abilities;

- Develop and implement effective leadership strategies for arts educators;

- Develop and implement innovative model program(s) in partnership with public and private arts and education institutions/organizations which improve approaches to arts education;

- Increase awareness of the importance of arts education among educators, artists, and the general public, and disseminate art education information statewide;

- Develop and implement, in cooperation with the Arts High School, a plan to share the Arts High School curriculum as a resource to enhance arts education in public schools;

- Implement research, evaluation and assessment techniques to review and report on Resource Programs.

The Center has established the following goals for its Arts High School Programs for fiscal years 1990 and 1991:

- Identify high school students possessing potential or developed artistic talent through assessment of motivation, creativity and proficiency.

- Educate artistically talented 11th and 12th graders in an innovative program which models the following characteristics:

*A learner-outcome based curriculum organized around what students need to know, to do, to value and to create;
*Emphasis on both the arts and the general studies;
*Interdisciplinary studies that integrate the arts and general studies by emphasizing relationships, patterns and connections;
*Assessment of student progress and achievement based on observational indicators as well as written work and conventional testing;
*Innovative instructional strategies;
*An individual learner focus;
*A climate that promotes creativity, communication, cooperation, and self-discipline;
*Expanded teachers' role as professional educators.

- Serve as a resource to professional educators and artists and involve educators and artists in the school programs as resources

- Educate artistically talented 9th-12th graders in part-time programs such as mentorships, intensive seminars, and summer programs that model and reflect the full-time program characteristics.

Approved: Board of Directors, September 14, 1990

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APPENDIX #2

FOCUS GROUP PARTICIPANTS

Students

Brian Abbott
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Anna Balla
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Jim Bergstrom
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Julie Dahl
Shantel Ehrenberg
Heather Elliott
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Magda Franco
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Eric Hjelle
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Yumeca Moses
Sarah Neunsinger
Pam Plagge
Victor Policheri
Linda Reichle
Allison Ristow
David Rothman
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Faculty

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Lin Enger, Literary Arts
Maryann Dorsey, Mathematics
Beth Fratzke, Communications Skills
Mary Harding, Dance
Henry Hebert, Communications Skills
Eva Holt, Science
Judy Johannessen, World Languages
Karen Monson, Visual Arts
Barbara Morin, Theater
Bill Slack, Visual Arts
Rik Svien, Science
John Welcke, Social Studies
JoAnn Winter, World Languages

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APPENDIX #3

FOCUS GROUP "QUESTION ROUTE"

Primary Questions Asked of Students

1. What was your prior involvement in interdisciplinary education? Before coming to the Arts High School, did you have interdisciplinary experiences in your education?

2. Think about the Wednesday morning interdisciplinary studies classes. Can you recall and relate an interdisciplinary learning experience you've had here at the Arts High School that was memorable, compelling or unique in some way? It can be a single activity on one day, or a larger experience, series of activities or assignments. It can be memorable because it was satisfying or because it was unsatisfying.

3. Consider all other learning experiences at the Arts High School except the special class. Think about your arts classes, general studies, assignments, field trips, interactions with staff and other students, productions and other aspects of the school. Can you recall and relate an interdisciplinary learning experience in any of these other settings or contexts? It can be a single activity on one day, or a larger experience, series of activities or assignments. It can be memorable because it was satisfying or because it was unsatisfying.

4. Which interdisciplinary learning setting works best for you: in the Wednesday morning interdisciplinary studies classes, or in your other classes and activities? Think about why.

5. Is there anything else about interdisciplinary learning and the Arts High School that you want to add to the discussion?

Primary Questions Asked of Teachers

1. What was your prior involvement in interdisciplinary education? Before coming to the Arts High School, were you involved in interdisciplinary teaching experiences?

2. Think about the Wednesday morning interdisciplinary studies classes and everywhere else interdisciplinary teaching may occur. Can you recall and relate an interdisciplinary learning experience you've offered here at the Arts High School that was memorable, compelling or unique in some way? It can be a single activity on one day, or a larger experience, series of activities or assignments. It can be memorable because it was satisfying or because it was unsatisfying.

3. Thinking about interdisciplinary teaching experiences, can you generalize about the factors that contribute to a successful interdisciplinary teaching and learning?

4. Here is one definition of interdisciplinary education: "Any or all conscious attempts to combine or connect the content or methods of two or more subject areas." What would you add or change in this definition?

5. How important is interdisciplinary education? What is the "mission" or essential value of interdisciplinary education?

6. In order to further interdisciplinary education at the Arts High School, what suggestions do you have for scheduling?

7. Is there anything else about interdisciplinary learning and the Arts High School that you want to add to the discussion?

APPENDIX #4

Questionnaire on Interdisciplinary Team Teaching

1. Team teaching is an essential component of interdisciplinary teaching: (circle one)
   YES NO SOMETIMES

2. Team teaching with another teacher can be enjoyable for the following reasons:

3. Team teaching with another teacher can be difficult for the following reasons:

4. Your team teaching experience this year has been:
   (circle one) SATISFYING ADEQUATE NOT SATISFYING

5. Thinking about this year's team teaching experience, you found the following aspects of the experience to be positive:

   You found the following aspects to be problematical:

6. Your primary strength as an interdisciplinary team member is:

7. Your primary weakness as an interdisciplinary team member is:

8. You would benefit from some inservice on how to be a good team member:
   (circle one) YES SOMEWHAT NOT REALLY

9. If you answered "Yes" or "Somewhat" to the previous question, do you have any suggestions about the kind of inservice which might be helpful to you or to others?

10. Some other thoughts you have on team teaching are:

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PERSPECTIVES ON INTERDISCIPLINARY EDUCATION AT THE MINNESOTA CENTER FOR ARTS EDUCATION

A summary of the conclusions:

1. **Interdisciplinary education is not extensive in public education systems.**
   Some of the students and most of the faculty described previous experience with interdisciplinary education, but both groups recall interdisciplinary education as playing a very small role in the schools they came from. Experiences which did occur were quite minor, and did not seem to be part of any intentionally planned program.

2. **Students and faculty shared a definition of interdisciplinary education.**
   Interdisciplinary education at the Arts High School is characterized by an educational view valuing the inherent interconnected quality of knowledge.

3. **The mission for interdisciplinary education is compelling.**
   According to teachers, the mission of interdisciplinary education is to awaken in students personal connections with information so that they become more committed to learning about and celebrating existence.

4. **Most students felt a primary attraction to the Arts High School because of the arts emphasis; however, some felt interdisciplinary studies was also essential.**
   Students express mixed feelings about the importance of interdisciplinary studies at this school. Most consider the interdisciplinary aspect of the school to be important, but they also feel that the school's uniqueness is its arts focus and were the interdisciplinary aspect to be diminished, the school's essential nature or purpose would not change.

5. **Most students liked the delivery of interdisciplinary education through a separate course, but they debated the successfulness of the current classes.**
   Students like to preserve a special time in the schedule for interdisciplinary studies as they feel it provides a sure opportunity to learn about provocative issues. They feel, however, that the 1990-91 schedule posed a number of logistical problems which got in the way of learning. For example, the classes did not meet long enough or often enough to provide sufficient depth.

6. **Faculty views were mixed regarding the need for a separate interdisciplinary course.**
   Some teachers felt that a separate course plays a role in underscoring the importance of interdisciplinary education, of making sure it occurs in a significant way. Others felt that delivering interdisciplinary through a separate course goes against the concept of interdisciplinary. They also felt that if greater integration into general studies and arts was to occur, considerable coordination and preplanning would need to take place.

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7. **Interdisciplinary teaching and learning occurs at the Arts High School not only in the separate class, but also during general studies and arts classes. To some students, integrating more interdisciplinary education into general studies and the arts is problematical.**
Some students were concerned that if too many connections were being made in their general studies subjects, they might be losing the instruction they need to gain basic knowledge of the subjects. At the same time, students also expressed concern about losing focus on their arts areas if too much time is devoted to making interdisciplinary connections.

8. **The majority of interdisciplinary education at the Arts High School relates the arts to non-arts areas. Students and faculty expressed an interest in more inter-arts education.**
Students specialize in one of six arts areas. Many students spoke of wanting more interaction with other arts areas. Some arts teachers expressed a concern about getting isolated in their arts discipline.

9. **Teachers expressed significant concerns about assessment of interdisciplinary education.**
Teachers felt that assessment must be flexible so that teachers can alter the stated outcomes as the teaching and learning progress. Interdisciplinary experiences can break new ground and bring about unanticipated results. It is important for the assessment to support the experience and not get in the way.

10. **Team teaching is an integral part of the separate interdisciplinary studies class, and is frequently essential in other settings as well.**
Teachers believe that students benefit from observing adults working side by side, encountering each other's fields. Team teaching can also be very enriching for individual teachers and the entire faculty. Problems can arise when planning time is difficult to find or when planning time is not used effectively.

11. **Students and teachers expressed remarkable similar outlooks about interdisciplinary education and the interdisciplinary studies at the Arts High School.**
Students and teachers tended to agree on the definition of interdisciplinary education, the lack of opportunities in the general education system, and the factors needed to achieve successful interdisciplinary programs. The most notable difference was that students favored a separate interdisciplinary class, despite their reservations about the current year's classes. Teachers were more divided about he wisdom of delivering interdisciplinary through a separate class.

12. A number of specific factors influence whether interdisciplinary education flourishes.

Factors which may positively affect interdisciplinary education are:
a flexible attitude on the part of the teacher;
adequate preplanning time for teachers;
preservice and inservice education for teachers;
use of a variety of participatory, hands-on teaching and learning strategies;
willingness to give more than usual control to students for the aim and methods of the learning experience;
permission for students and teachers to be playful and to experience learning together;
discovery of natural linkages between areas;
inclusion of the arts;
a reasonable number of students;
availability and use of various materials in addition to those in print format;
opportunities for team teaching;
and opportunities for student cooperative work as well as individual work.

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